

REMARKS

The Final Office Action mailed April 7, 2006, has been received and reviewed. Claims 1 through 22 are currently pending in the application. Claims 1 through 22 stand rejected. Applicant proposes to amend claims 1, 11, and 16, and respectfully request reconsideration of the application as proposed to be amended herein.

35 U.S.C. § 102(b) Anticipation RejectionsAnticipation Rejection Based on U.S. Patent No. 6,492,898 to Sabbattini et al.

Claims 1, 2, 7 through 9, 11, 12, 16, 17, 21 and 22 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Sabbattini et al. (U.S. Patent No. 6,492,898). Applicant respectfully traverses this rejection, as hereinafter set forth.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Brothers v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Applicants submit that the Sabbattini reference does not and cannot anticipate under 35 U.S.C. § 102 the presently claimed invention of amended independent claim 1 and claims 2, 7 through 9 depending therefrom, amended independent claim 11 and claim 12 depending therefrom, and amended independent claim 16 and claims 17, 21 through 22 depending therefrom, because the Sabbattini reference does not describe, either expressly or inherently, the identical inventions in as complete detail as are contained in the claims.

Claims 1, 2, 7 through 9

The Office Action alleges:

Regarding claim 1, Sabbattini discloses a pipeline communication system comprising a pipeline 10 having a first surface extending along at least [a] portion of a length of the pipeline, **conductive bus 10**, a transmitter 2, and a receiver 3. (Office Action, p. 2; emphasis added).

Applicants respectfully disagree that the Sabbattini reference anticipates Applicants' invention as claimed in amended independent claim 1 which reads:

1. A pipeline communication system, comprising:

a pipeline having a first surface extending along at least a portion of a length of the pipeline;
a conductive bus formed to and extending along a portion of the first surface of the pipeline, ***the conductive bus electrically insulated from the pipeline***;
a transmitter operably coupled to the conductive bus for sending information along; and
a receiver operable coupled to the conductive bus for receiving the information therefrom.
(Emphasis added.)

In contrast, the Sabbattini reference discloses:

... the pipeline itself forms a data line. (Sabbattini Abstract).
According to the [Sabbattini] invention, the pipeline itself is used as a data line by electrical signals ... (Sabbattini, col. 2, lines 6-7).
A plurality of pipes 10 form a common electrically conductive section of the pipeline 2, ... (Sabbattini, col. 2, lines 57-59).

Clearly, the Sabbattini reference discloses “the pipeline itself form[ing] a data line”. However, nothing within the Sabbattini reference discloses “a conductive bus ***formed to and extending along*** a portion of ***the first surface*** of the pipeline, ***the conductive bus electrically insulated from the pipeline***” as claimed by Applicants.

Therefore, amended independent claim 1, and claims 2, 7 through 9 depending therefrom, cannot be anticipated by the Sabbattini reference under 35 U.S.C. § 102. Accordingly, such claims are allowable over the cited prior art and Applicants respectfully request that such rejections be withdrawn.

Claims 11, 12

The Office Action alleges:

Regarding claim 11, Sabbattini discloses a pipeline communication bus comprising a communication bus 10 including ***a first conductive trace (at 2) and a second conductive trace (at 3)***, a transmitter interface 2, a receiver 3. (Office Action, p. 2; emphasis added).

Applicants respectfully disagree that the Sabbattini reference anticipates Applicants’ invention as claimed in amended independent claim 11 which reads:

11. A pipeline communication bus, comprising:
a conductive bus including a first conductive trace and a second conductive trace, the first and second conductive traces adapted to conformally couple with a pipeline at a first surface extending along at least a portion of the length of the pipeline, ***the conductive bus electrically insulated from the pipeline***;

a transmitter interface adapted to operably send information along the conductive bus;
and
a receiver interface adapted to operably receive information along the conductive bus.
(Emphasis added.)

As stated, the Sabbattini reference discloses:

... the pipeline itself forms a data line. (Sabbattini Abstract).
According to the [Sabbattini] invention, the pipeline itself is used as a data line by
electrical signals ... (Sabbattini, col. 2, lines 6-7).
A plurality of pipes 10 form a common electrically conductive section of the
pipeline 2, ... (Sabbattini, col. 2, lines 57-59).

Again, the Sabbattini reference discloses “the pipeline itself form[ing] a data line”.
However, nothing within the Sabbattini reference discloses “**a conductive bus** including a first
conductive trace and a second conductive trace, the first and second conductive traces *adapted to
conformally couple with a pipeline at a first surface extending along at least a portion of the
length of the pipeline, the conductive bus electrically insulated from the pipeline*” as claimed by
Applicants.

Therefore, amended independent claim 11, and claim 12 depending therefrom, cannot be
anticipated by the Sabbattini reference under 35 U.S.C. § 102. Accordingly, such claims are
allowable over the cited prior art and Applicants respectfully request that such rejections be
withdrawn.

Claims 16, 17, 21, 22

The Office Action alleges:

Regarding claim 16, Sabbattini discloses [a] method of communicating along a
pipeline comprising forming a plurality of conductive traces (at 2, 3) coupling to a
pipeline at a surface extending along at least a portion of the length of the pipeline,
transmitting (2) information along the plurality of the conductive traces and receiving (3)
information along the plurality of the conductive traces. (Office Action, p. 2; emphasis
added). (Office Action, p. 2; emphasis added).

Applicants respectfully disagree that the Sabbattini reference anticipates Applicants’
invention as claimed in independent claim 16 which reads:

16. A method of communicating along a pipeline, comprising:
*forming a plurality of conductive traces conformally coupled to a pipeline at a surface
extending along at least a portion of the length of the pipeline, **the plurality of***

conductive traces electrically insulated from the pipeline;
transmitting information along the plurality of conductive traces; and
receiving the information from the plurality of conductive traces.

As stated, the Sabbattini reference discloses:

... the pipeline itself forms a data line. (Sabbattini Abstract).
According to the [Sabbattini] invention, the pipeline itself is used as a data line by
electrical signals ... (Sabbattini, col. 2, lines 6-7).
A plurality of pipes 10 form a common electrically conductive section of the
pipeline 2, ... (Sabbattini, col. 2, lines 57-59).

Again, the Sabbattini reference discloses “the pipeline itself form[ing] a data line”.
However, nothing within the Sabbattini reference discloses “*forming a plurality of conductive traces conformally coupled to a pipeline at a surface extending along at least a portion of the length of the pipeline, the plurality of conductive traces electrically insulated from the pipeline*” as claimed by Applicants.

Therefore, amended independent claim 16, and claims 17, 21, 22 depending therefrom, cannot be anticipated by the Sabbattini reference under 35 U.S.C. § 102. Accordingly, such claims are allowable over the cited prior art and Applicants respectfully request that such rejections be withdrawn.

35 U.S.C. § 103(a) Obviousness Rejections

Obviousness Rejection Based on U.S. Patent No. 6,492,898 to Sabbattini et al.

Claim 10 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Sabbattini et al. (U.S. Patent No. 6,492,898). Applicant respectfully traverses this rejection, as hereinafter set forth.

M.P.E.P. 706.02(j) sets forth the standard for a Section 103(a) rejection:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, **the prior art reference (or references when combined) must teach or suggest all the claim limitations.** The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant’s disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir.

1991). (Emphasis added).

The 35 U.S.C. § 103(a) obviousness rejections of claim 10 is improper because the elements for a prima facie case of obviousness are not met. Specifically, the rejection fails to meet the criterion that the prior art reference must teach or suggest all the claims limitations.

Regarding claim 10, which depends from claim 9 which further depends from amended independent claim 1, Applicants sustain the above-proffered arguments that the Sabbattini reference does not teach, suggest or motivate Applicants' invention as claimed in independent claim 1. As stated, the Sabbattini reference teaches or suggests "the pipeline itself form[ing] a data line". However, nothing within the Sabbattini reference discloses "*a conductive bus formed to and extending along a portion of the first surface of the pipeline, the conductive bus electrically insulated from the pipeline*" as claimed by Applicants.

Additionally, not only does the Sabbattini reference lack a teaching or suggestion of Applicants' claim limitation of "*a conductive bus formed to and extending along a portion of the first surface of the pipeline, the conductive bus electrically insulated from the pipeline*", the Sabbattini reference teaches away from such a claim limitation. Specifically, the Sabbattini reference teaches or suggests that further formation or placement of conductive elements is undesirable. The Sabbattini reference specifically teaches or suggests:

... data communication is effected ... via dedicated pilot cables laid along the pipeline [] [h]owever, ... some instances, [] do not permit a pilot cable to be laid [and] [m]oreover, ... [is] associated with relatively high costs, ... because of the additionally necessary installations in the case of ... the pilot cable, and also because of the increased outlay on maintenance in the case of the pilot cable." (Sabbattini, col. 1, lines 18-32).

Accordingly, the Sabbattini reference teaches away from using any other conductors other than using "the pipeline itself [for] form[ing] a data line". Therefore, dependent claim 10 which at least indirectly depends from amended independent claim 1, cannot be rendered obvious under 35 U.S.C. §103 by the Sabbattini reference. Accordingly, such claim is allowable over the cited prior art and Applicants respectfully request that such rejection be withdrawn.

Obviousness Rejection Based on U.S. Patent No. 6,492,898 to Sabbattini et al. in view of U.S. Patent No. 6,916,502 to Moore et al.

Claims 3 through 6, 13 through 15, and 18 through 20 stand rejected under 35 U.S.C. §

103(a) as being unpatentable over Sabbattini et al. (U.S. Patent No. 6,492,898) in view of Moore et al. (U.S. Patent No. 6,916,502). Applicant respectfully traverses this rejection, as hereinafter set forth.

M.P.E.P. 706.02(j) sets forth the standard for a Section 103(a) rejection:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, **there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings.** Second, there must be a reasonable expectation of success. Finally, **the prior art reference (or references when combined) must teach or suggest all the claim limitations.** The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). (Emphasis added).

The 35 U.S.C. § 103(a) obviousness rejections of claims 3 through 6 (at least indirectly depending from amended independent claim 1), claims 13 through 15 (at least indirectly depending from amended independent claim 11), and claims 18 through 20 (at least indirectly depending from amended independent claim 16), are improper because the elements for a *prima facie* case of obviousness are not met. Specifically, the rejection fails to meet the criterion that the prior art reference must teach or suggest all the claims limitations.

Applicants sustain the above-proffered arguments that the Sabbattini reference does not teach, suggest or motivate Applicants' invention as claimed in amended independent claims 1, 11 and 16. The Office Action introduces the Moore reference and alleges:

Regarding claims 3 through 6, 13 through 15, 18 through 20, . . . Moore teaches the use of thermally sprayed, electrically conductive material (abstract), a first insulative layer, a bonding layer, a second insulative layer (column 10, line 55-col. 11, line 5). (Office Action, p. 4).

Even assuming, *arguendo*, that the Moore reference teaches or suggests the elements as alleged, Applicants' invention as presently claimed in the respective amended independent claims recite:

1. A pipeline communication system, comprising:
a pipeline having a first surface extending along at least a portion of a length of the pipeline;
a conductive bus formed to and extending along a portion of the first surface of the pipeline, the conductive bus electrically insulated from the pipeline;

a transmitter operably coupled to the conductive bus for sending information along; and
a receiver operable coupled to the conductive bus for receiving the information therefrom.
(Emphasis added.)

11. A pipeline communication bus, comprising:
a conductive bus including a first conductive trace and a second conductive trace, the first and second conductive traces *adapted to conformally couple with a pipeline at a first surface extending along at least a portion of the length of the pipeline, the conductive bus electrically insulated from the pipeline*;
a transmitter interface adapted to operably send information along the conductive bus;
and
a receiver interface adapted to operably receive information along the conductive bus.
(Emphasis added.)

16. A method of communicating along a pipeline, comprising:
forming a plurality of conductive traces conformally coupled to a pipeline at a surface extending along at least a portion of the length of the pipeline, the plurality of conductive traces electrically insulated from the pipeline;
transmitting information along the plurality of conductive traces; and
receiving the information from the plurality of conductive traces. (Emphasis added.)

While a precise reading of the Moore reference teaches or suggests “spraying the conductive material toward the interior surface of the pipe to form a plurality of conductive traces” (Moore, col. 10, lines 56-57), the Moore reference concedes that such conductive traces are “monitored for changes in resistance or conductivity that may signal changes such as strain or deformation in the pipeline” (Moore, col. 7, lines 58-60). Such traces are selected for their resistivity and **not** their conductivity for use in communications as a conductive bus or conductive traces.

Accordingly, the Sabbattini reference and the Moore reference, either individually or in any proper combination, do not teach or suggest Applicants’ “pipeline communication system” or “pipeline communication bus” or a “method of communicating along a pipeline” through “a conductive bus” wherein “the conductive bus electrically insulated from the pipeline” or “the plurality of conductive traces electrically insulated from the pipeline” as claimed in Applicants’ respective amended independent claims from which claims 3 through 6, 13 through 15, 18 through 20 at least indirectly depend.

Furthermore, the Sabbattini reference and the Moore reference lack any teaching or suggestion to combine the references. As stated, the Sabbattini reference teaches away from using any other conductors other than using “the pipeline itself [for] form[ing] a data line”.

Therefore, neither the Sabbattini reference nor the Moore reference, either individually or in any proper combination, can render obvious under 35 U.S.C. §103 Applicants’ invention as claimed. Accordingly, Applicants respectfully request that the rejection of dependent claims 3 through 6, 13 through 15, 18 through 20 be withdrawn.

ENTRY OF AMENDMENTS

The proposed amendments to claims 1, 11, and 16 above should be entered by the Examiner because the amendments are supported by the as-filed specification and drawings and do not add any new matter to the application. Further, the amendments do not raise new issues or require a further search. Finally, if the Examiner determines that the amendments do not place the application in condition for allowance, entry is respectfully requested upon filing of a Notice of Appeal herein.

CONCLUSION

Claims 1 through 22 are believed to be in condition for allowance, and an early notice thereof is respectfully solicited. Should the Examiner determine that additional issues remain which might be resolved by a telephone conference, the Examiner is respectfully invited to contact Applicant's undersigned attorney.

Respectfully submitted,

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